AMENDMENTS TO THE CLAIMS

The following listing of claims will replace all prior versions and listings of claims in the application.

LISTING OF CLAIMS

1.   (Currently Amended) A shift control system for controlling gear shifts in a vehicle, comprising:

a transmission;

a controller that detects driving conditions of said vehicle, that indicates a downshift of said transmission based on said driving conditions, that estimates a traction load of said vehicle, that determines a current traction load of said vehicle, that selectively inhibits said downshift if a square of based on said current traction load is less than a square of and said estimated traction load.

2.   (Cancelled)

3.   (Original) The shift control system of claim 1 wherein said controller determines said current traction load based on a lateral acceleration signal and a longitudinal acceleration signal.

4.   (Original) The shift control system of claim 3 further comprising:

a lateral accelerometer that generates said lateral acceleration signal; and

a longitudinal accelerometer that generates said longitudinal acceleration signal.

5.   (Original) The shift control system of claim 3 wherein said controller calculates said longitudinal acceleration based on a change in vehicle speed over time.

6.   (Original) The shift control system of claim 1 wherein said controller estimates said traction load based on a curb weight of said vehicle, a weight transfer gain and an acceleration signal.

7.   (Original) The shift control system of claim 6 further comprising an accelerometer that generates said acceleration signal.

8.   (Original) The shift control system of claim 6 wherein said weight transfer gain represents changes in vehicle weight distribution based on vehicle acceleration.

9.   (Currently Amended) A method of controlling automatic transmission shifts in a vehicle, comprising:

    detecting driving conditions of said vehicle;

    indicating a downshift of a transmission based on said driving conditions;

    estimating a traction load of said vehicle;

    calculating a current traction load of said vehicle; and

    selectively inhibiting said downshift if a square of based on said current traction load is less than a square of and said traction load.

10. (Original) The method of claim 9 wherein said current traction load is based on a lateral acceleration signal and a longitudinal acceleration signal.

11. (Original) The method of claim 10 further comprising:

generating said lateral acceleration signal with a lateral accelerometer; and

generating said longitudinal acceleration signal with a longitudinal accelerometer.

12. (Original) The method of claim 10 wherein said longitudinal acceleration is calculated based on a change in vehicle speed over time.

13. (Previously Presented) The method of claim 9 wherein said traction load is based on a curb weight of said vehicle, a weight transfer gain and an acceleration signal.

14. (Original) The method of claim 13 further comprising generating said acceleration signal with an accelerometer.

15. (Original) The method of claim 13 wherein said weight transfer gain represents changes in vehicle weight distribution based on vehicle acceleration.

16. (Currently Amended) A method of controlling automatic transmission downshift of a vehicle, comprising:

detecting downshift conditions;

estimating a traction load of said vehicle based on a lateral acceleration signal;

estimating a current traction load of said vehicle based on a longitudinal acceleration signal; and

selectively inhibiting said downshift <u>if a square of</u> ~~based on~~ said current traction load <u>is less than a square of</u> ~~and~~ said traction load.

17.	(Original) The method of claim 16 further comprising:

generating said lateral acceleration signal with a lateral accelerometer; and

generating said longitudinal acceleration signal with a longitudinal accelerometer.

18.	(Original) The method of claim 16 wherein said longitudinal acceleration signal is calculated based on a change in vehicle speed over time.

19.	(Original) The method of claim 16 wherein said traction load is based on a curb weight of said vehicle, a weight transfer gain and an acceleration signal.

20.	(Original) The method of claim 19 further comprising generating said acceleration signal with an accelerometer.

21.	(Original) The method of claim 19 wherein said weight transfer gain indicates changes in vehicle weight distribution based on vehicle acceleration.

22.	(New) A shift control system for controlling gear shifts in a vehicle, comprising:

a transmission;

a controller that detects driving conditions of said vehicle, that indicates a downshift of said transmission based on said driving conditions, that estimates a traction load of said vehicle, that determines a current traction load of said vehicle, that selectively inhibits said downshift if a magnitude of said current traction load is less than a magnitude of said estimated traction load.

23.　(New) A method of controlling automatic transmission downshift of a vehicle, comprising:

detecting downshift conditions;

estimating a traction load of said vehicle based on a lateral acceleration signal;

estimating a current traction load of said vehicle based on a longitudinal acceleration signal; and

selectively inhibiting said downshift if a magnitude of said current traction load is less than a magnitude of said traction load.